# Echelon Biosciences Inc.

## Human Lysosomal Phospholipase A2, active

E-7000

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**Description:**
Human Lysosomal Phospholipase A2 (hLPLA2) with C-terminal 6X-His tag was expressed in HEK 293Tn cells and purified using nickel-NTA chromatography. The 6X-His tag was then removed by TEV protease.

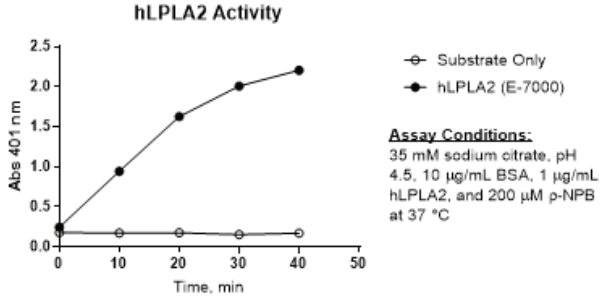
**Properties:**

Size – 10 µg
Form – Lyophilized
Storage – Store enzyme at -80 °C
Stability – ≥ 6 months from date of receipt

Please refer to Certificate of Analysis (COA) for lot specific buffer formulation, enzyme purity and enzyme specific activity. Please contact technical support for COA of the current lot.

**Background:**
LPLA2 is a calcium-independent PLA2, localized to lysosomes, has an acidic pH optimum, and transacylates lipophilic primary alcohols.[1-3] Belonging to the α/β-hydrolase superfamily, LPLA2 is a water-soluble glycoprotein consisting of a single peptide chain with a molecular weight of 45 kDa. In addition to Phospholipase A2 activity, LPLA2 exhibits esterase activity over a wide pH range,[4] and is measured with nitro-phenylbutyrate as a substrate. LPLA2 is secreted under certain conditions.[5] For example, Alveolar macrophages (AMs) secrete LPLA2 following stimulation by Zymosan. Secreted LPLA2 is taken up by AMs via a mannose receptor and transported into acidic compartments. LPLA2-deficient mouse AMs result in a significant accumulation of glycerol-phospholipid and formation of lamellar inclusion bodies, which are characteristic of cellular phospholipidosis.[6] Thus, LPLA2 may be important in the regulation of phospholipids in those cells. Cationic amphiphilic drugs (CADs) can interact with phospholipids and may lead to a reduction in LPLA2 activity, resulting in cellular phospholipidosis in MDCK cells. This suggests that LPLA2 may play an important role in some forms of CAD-induced phospholipidosis in humans.[7]

**Specific Activity:**
Please see COA for lot specific enzyme activity




**References:**


1. Abe, A.; Hiraoka, M.; Shayman, J. A., The acylation of lipophilic alcohols by lysosomal phospholipase A2. J Lipid Res 2007, 48, (10), 2255-63.
2. Abe, A.; Shayman, J. A., Purification and characterization of 1-O-acylceramide synthase, a novel phospholipase A2 with transacylase activity. J Biol Chem 1998, 273, (14), 8467-74.
3. Hiraoka, M.; Abe, A.; Shayman, J. A., Cloning and characterization of a lysosomal phospholipase A2, 1-O-acylceramide synthase. J Biol Chem 2002, 277, (12), 10090-9.
4. Abe, A.; Shayman, J. A., The role of negatively charged lipids in lysosomal phospholipase A2 function. J Lipid Res 2009, 50, (10), 2027-35.
5. Abe, A.; Kelly, R.; Kollmeyer, J.; Hiraoka, M.; Lu, Y.; Shayman, J. A., The secretion and uptake of lysosomal phospholipase A2 by alveolar macrophages. J Immunol 2008, 181, (11), 7873-81.
6. Hiraoka, M.; Abe, A.; Lu, Y.; Yang, K.; Han, X.; Gross, R. W.; Shayman, J. A., Lysosomal phospholipase A2 and phospholipidosis. Mol Cell Biol 2006, 26, (16), 6139-48.
7. Abe, A.; Hiraoka, M.; Shayman, J. A., A role for lysosomal phospholipase A2 in drug induced phospholipidosis. Drug Metab Lett 2007, 1, (1), 49-53.


**Related Products:**

| Products | Catalog Number |
|---|---|
| Antibody | |
| Purified Anti-LPLA2 Antibody | Z-PLPLA2 |
| Assay | |
| LPLA2 Inhibitor Screen | K-7000I |

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